Michael Potts

Data Science, Machine Learning, Data Analyst

COVER LETTER

Real world problems are profoundly interdisciplinary, solving them requires integrating diverse data from multiple sources - Allen Renear UIUC CS 598

My background has provided me a wealth of knowledge and skills important for the field of data science. I worked as a patient data abstractor, directly reviewing several thousand charts for inclusive criteria. As well, I worked as a Registered Nurse where I learned how to sift through immense amounts of information to recognize important details and how they relate together to improve overall patient outcomes and care. All this experience has provided me with excellent critical thinking skills, the proficiency to quickly process and analyze data, as well as the ability to build rapport with ease. In 2020, I started pursuing a career in research and worked as a research assistant at the startup - TLEC innovations. This allowed me to gain invaluable experience within the research world, to stretch my ability with technical research (renewable energy dealing with battery technology, catalyst discovery/research and mechanical streamlining), and to gain firsthand experience in smaller programming tasks.

Since settling into the Master program, I have had the opportunity to work on several projects, many of my own design. I designed and coded a prototype bluetooth diabetic foot monitor, and also programmed a Kivy based android app to accompany it. Further to this, I replicated, updated, and altered a deep learning patient mortality prediction model which used a latent space representation as part of its classification algorithm. As part of my studies, I have been introduced to a large variety of machine learning models and some of the newest deep learning algorithms discussed in the current literature. I have also had the opportunity to develop an IOT self-driving car with Pradeep Sakhamoori computer vision(openVINO), mapping, and collision avoidance algorithms, as well as a big data analytic machine learning project around vehicle GHG emission prediction and modeling. I have also had the honour of being accepted into the Sunstella machine learning research program which is dedicated to exposing graduate students to the research process, preparing students for a PhD in a data science/machine learning, and interning with them to publish research during the program: I worked in Health AI with a physician-informaticist who is researching the long term effects of various respiratory illnesses on pediatric patients using graph neural networks and clinical feature extraction. This project taught me how to implement research-based algorithms in practical, real-world models. As for Natural language processing, I have implemented a sentiment analysis model on a Wikipedia web crawler also of my own creation. I have recently begun working with Dr. Caesar (University of Illinois – Urbana Champaign) and his research team to create a sensor array and data pipelines for artificially intelligent drones.

I am passionate about working with data, and especially so when my work can help impact the lives of the people around me in a positive way.

Thank you for your consideration, I look forward to hearing from you.

Michael Potts 250-469-0253

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OBJECTIVE

Master of Computer Science graduate looking for employment in the positions of data scientist or machine learning engineer.

Website: michael-j-potts.github.io
Linked in: https://www.linkedin.com/in/michael-potts-b441a218b/
Github: https://github.com/michael-j-potts/portfolio

EDUCATION

University of Illinois – Urbana Champaign
Master of Computer Science (Data Science)
2021-2022 GPA – 4.0
Applied Machine Learning
Internet of Things
Deep Learning for Health Care
Advanced Bayesian modeling
Data Visualization
Theory and Practice of Data Cleaning
Foundations of data curation
Text Information Systems

2020 – 2021 Pre-requisites - GPA 4.0:
Single and Multivariate Calculus
Linear Algebra
Computer Programming (C++)
Data structures and algorithms (C++)
University of British Columbia 2012-2017
Bachelor of Science in Nursing - GPA 3.9

KEY SKILLS

Primary Languages: Python, C++, R, MySQL
Secondary Languages: Javascript, HTML

Applications: classification, clustering, regressio deep learning, machine learning, time series analysis, dimension reduction, data pipelines, sentiment analysis, object detection, image classification, natural language processing

Packages: Pytorch, Tensorflow, NumPy, Pandas, Sklearn, Jupyter, Anaconda, OpenCV, Github, Matplotlib, Linux, Excel, Kivy, OpenRefine, Tableau, D3, AWS, Docker, SaS, Apache Spark

EXPERIENCE

January 2023 - current
Machine Learning Engineer • Internet of Things • Dr. Caesar Research Group
I am working on creating sensor arrays and data pipelines for artificially intelligent drones. Further I am working to create a software defined radio.

May 2022 – July 2022
Data Science (deep learning) Research • Sunstella machine learning research
I worked on a pediatric classification program utilizing graph neural networks and neural backed decision forests to classify the severity and level of care required for viral respiratory infections.

2020 – Jan. 2022
Research Assistant • TLEC Innovations
I was responsible for creating technical research reports, programming, and creating business presentations and patent documents for renewable energy solutions

2017 - 2020
Registered Nurse • Cardiac and Community Care • Interior Health
I maintained all the duties of a nurse in Cardiac and Community care. Further, I was responsible for educating patients about complex medication interventions and care.

2016 - 2016
Data Abstractor • Kelowna Injury Surveillance Collaborative
I was responsible for gathering and abstracting data from several thousand emergency room charts to review the effects of anti-coagulant therapies on traumatic brain injuries.

PROJECTS

Sunstella – Researched extending graph neural network models to improve prediction of hospitalization and severity of illness in pediatric respiratory patients
Deep Learning – Assignments covering deep learning, CNNs, Seq2Seq, RNNs, autoencoders, attention models, GNNs, memory networks and generative models. Recreated and improved upon a latent space correlational neural network model.
IOT – Created a diabetic foot monitor that monitors feet for trauma and proper care. Created a self-driving car that accepts coordinates, implements object detection and avoidance as well as intelligently handles different types of obstacles.
Applied Machine Learning – Assignments covering classification, regression, clustering, expectation maximization, high dimensional data, and convolutional neural networks. Project predicting vehicle GHG emissions on 16.3 million vehicle data set.
Self – I have designed a hospital admission application, as well as an application for the diabetic foot monitor both using python Kivy.

AWARDS + CERTIFICATES

Professional Certificates and Development:

Data or Specimens Only Research - MIT	2022
Electrical engineering crash course – Khan Academy	2020
Python for everybody – University of Michigan	2019
Cultural Sensitivity Modules – UBCO	2017
Nursing Preceptor (educating 2nd and 3rd nursing students) - UBCO	2017
Tri-Council Policy Statement - Ethical Conduct for Research Involving Humans	2016
Nursing related (11 additional)	2012- 2018

Awards:

Deputy Vice Chancellor Scholarship	2013
Chancellors' scholar Award	2012
Ron Sweeney Rising Star Award	2012
Dr. David Clarke Bursary	2012
Coast Capital Education Award	2012
Provincial Scholarship Award	2012

REFERENCES

Professional References:

Harvey Ching (Chief Operations Officer, TLEC Innovations)	1-604-805-9835

Personal References:

Bre Harwood	1-250-718-6406